

FYI

Translation of "Written Reply (1st)" by Inventors
(filed on 21.01.04)

We have received an opinion that the inventions according to claims 1 to 13 have no inventive step, considering the citation 1: JP8-146997A, the citation 2: JP11-272298A, the citation 3: JP10-31499A and the citation 4: JP9-172413A.

(1) Regarding the citation 1

The examiner has pointed out that "the citation 1 describes an invention in which first codes are received and converted into second codes on a transmission channel, and the second codes are outputted". However, as is clear from the claim 3 or descriptions in a paragraph [0036] for Fig. 2 and in paragraphs [0113] to [0116] for Fig. 11, a short-term prediction analysis parameter, an electric power value and a long-term prediction lag which are obtained from the first codes are independently converted into the second codes based on predetermined conversion rules, respectively. The gain code and the fixed codebook code are determined such that the error between an excitation signal obtained from the above-mentioned parameters after the conversion and an excitation signal obtained from the parameters before the conversion takes

the minimum value.

However, according to the present invention, only the short-term prediction analysis parameter is converted independently from the other parameters. The excitation signal data (including the long-term prediction lag, the gain code and the fixed codebook code in the embodiment) are collectively converted such that the parameters depend on each other.

In the citation 1, some of the parameters included in the excitation signal data (the electric power value and the long-term prediction lag) are converted independently (by an electric power value code converting unit 550 and an long-term prediction lag code converting unit 560 shown in Fig. 2) based on predetermined conversion rules, respectively. Therefore, if the method described in the citations 2 to 4 ("data of lost packet are complemented by data in the past frame") is applied to the invention described in the citation 1, a significant inconsistency between the parameters arises, which causes the deterioration of the speech quality.

However, according to the present invention, respective parameters are collectively converted such that the difference between a speech signal obtained from the post-conversion excitation signal data and a speech signal obtained from the pre-conversion excitation signal

data takes a minimum value. Thus, the excitation signal data is converted based on the minimum classification error. It is therefore possible to avoid the inconsistency between the parameters and to prevent the deterioration of the speech quality.

As described above, the present invention cannot be easily derived from the citations 1 to 4.

FYI

Translation of "Written Reply (2nd)" by Inventors
(filed on 13.04.04)

In the citation 1, as is clear from the claim 3 (or descriptions in a paragraph [0036] for Fig. 2 and in paragraphs [0113] to [0116] for Fig. 11), with regard to a long-term prediction lag (adaptive codebook data) of the parameters for generating the excitation signal (data of excitation signal), "a long-term prediction lag code encoded by the first speech encoding method is converted to a long-term prediction lag code associated with the second speech encoding method according to the relationship between a long-term prediction lag code associated with the first speech coding method and a long-term prediction lag code associated with the second speech coding method". Moreover, "an excitation signal associated with the second speech coding method is generated according to the converted long-term prediction lag code associated with the second speech coding method".

On the other hand, in the present invention, the converting of a long-term prediction lag code by using the "relationship" is not carried out, and

the generating of an excitation signal in accordance with the "converted" parameters is not carried out. In other words, the data for generating "an excitation signal associated with the second speech coding method" (the data of second excitation signal) is obtained from the data for generating "an excitation signal associated with the first speech coding method" (the data of first excitation signal) without an operation of converting the parameters based on "the relationship". This corresponds to the common feature of the present invention that "the data of second excitation signal is obtained from the first excitation signal".

As described above, the present invention is different from the invention according to the citation 1.

Moreover, if the method described in the citations 2 to 4 ("data of lost packet are complemented by data in the past frame") is applied to the parameter conversion based on the "relationship" described in the citation 1, the conversion error influences the speech quality. However, it is possible according to the present invention to avoid the influence because the

converting of the parameters based on "the
relationship" is not carried out.